

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 3-4, 6-10, 12-19, and 21-25 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The applicant previously amended the independent claims 1 and 25 to include the limitation "a water vapor permeability of 20 to 1000 g/m²." The specification states that the water vapor permeability is 5 to 1000 g/m², preferably 20 to 400 g/m², particularly preferably 50 to 200 g/m² (pg. 7 lines 1-3). Thus, the claim fails to comply with the written description requirement.

3. In regards to claim 3, the applicant previously amended the claim to state "wherein said shirred food casing has a sigma-5 value of less than 10/10 N/mm²." The specification states that the sigma-5 value is below 20/20 N/mm², particularly preferably in the range from 2/2 to 10/10 N/mm² (pg. 4 lines 30-32). Thus, the claim fails to comply with the written description requirement.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. In regards to claim 23, the applicant claims "wherein the synthetic polymers consist of a mixture of a single copolyamide; polyether block amide; and partially or completely saponified polyvinylacetate." The applicant has amended claim 1 to state that the amide polymer consisting of aliphatic copolyamide including nylon 6/66 and/or nylon 6/12. Is the claim stating that the synthetic polymers are a mixture of either nylon 6/66 or nylon 6/12? Or, is the claim stating that the synthetic polymers can consist of a mixture of any single copolyamide? Also, claim 23 recites that the synthetic polymer consists of partially or completely saponified polyvinylacetate. Claim 23 is a dependent from independent claim 1, wherein claim 1 states the general term "water-soluble polymers." Claim 23 lacks antecedent basis for the claim terminology of "partially or completely saponified polyvinylacetate." The examiner suggests that the claim read "and wherein the water-soluble polymer is partially or completely saponified polyvinylacetate."

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 22 is rejected under 35 U.S.C. 102(b) as being anticipated by Huhn et al. (US 4,391,302, hereinafter "Huhn").

In regards to claim 22, Huhn discloses a shirred coupled tubular casing that comprises synthetic polymers (col. 11 lines 9-30). The outer surface used a corona discharge treatment (col. 6 lines 44-62). The outer surface tension was 47 (col. 8 lines 35-55). It would naturally follow that the shirred casing extends in the longitudinal direction by no more than 10% when it is stored on a smooth, planar support, without packaging at room temperature and 60% relative humidity.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 1, 3, 4, 6-10, 12-19, and 21, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merritt et al. (US 7,001,635, hereinafter "Merritt") in view of Delius et al. (US 5,773,059, hereinafter "Delius") in view of Ahlgren et al. (US 6,203,750, hereinafter "Ahlgren") in view of Stenger et al. (US 5,399,427, hereinafter "Stenger").

Merritt discloses a casing that is made from plastics or polyamides (col. 6 lines 55-57). The shirred stick casings are self-sustaining and adapted for stuffing with

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products, particularly emulsions that form sausages (col. 6 lines 11-13). The casings are made from plastics or polyamides (col. 6 lines 55-57), which are considered soft polymers. A typical additive to a casing is a plasticizer (col. 6 lines 62-65). The casings are stuffed to form individual links (col. 11 lines 7-9), thus it would be known to one of ordinary skill in the art that the casings were closed at one end. The tubular casings are typically gathered into compressed shirred ("pleated") sticks using well-known processes and equipment (cols. 6-7 lines 65-67 and line 1). During the shirring operation it is common to coat the casing, particularly the inner surface, with a solution that contains ingredients such as anti-pleat lock agents to form shirred stick casings with self-sustaining properties (col. 7 lines 1-13). The tubular casing may be sprayed with a surfactant, water, and/or humectant (col. 7 lines 1-5). Mineral oil may also be used to coat the casing during the shirring process (col. 7 lines 1-7). The examiner considers this a temporary setting of the shirring geometry and the resultant breakdown in tension of the shirred pleats. The method of forming a shirred sausage casing and filling the casing with meat on a high speed fully automatic (FAM) mechanical stuffer (col. 11 lines 7-9). The individual casings stuffed with meat were produced (col. 11 line 9). In general the polyamide used for the casing is nylon (col. 1 lines 62-63), which is an aliphatic polyamide. The plasticizer can include propylene glycol (col. 8 lines 6-9).

Merritt is silent with the specific properties that are associated with the self-sustaining shirred stick casing such as the bending percentage and the extension of the shirred food casing after shirring.

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Merritt discloses that when shirred casing stick are used with automatic food stuffing equipment it is extremely important that shirred casing stick has the durability to be a self-sustaining article (col. 8 lines 58-61). Thus, it would be obvious to one of ordinary skill in the art at the time of the invention that if the shirred casing stick is self-sustaining the amount of bending under the effect of the casings own weight would be minimal to none.

Merritt discloses that the formation of the shirred casing sticks will have sufficient coherency to hold together from immediately after shirring to storage (cols. 8-9 lines 67 and 1-7). Thus, it would be obvious to one of ordinary sill in the art at the time of the invention that if the shirred casing stick maintains its shape after shirring the amount of extension in the longitudinal direction would be minimal to none when stored.

Merritt is silent with the composition of the casing containing water-soluble polymers and the type of polyamides.

Delius discloses a casing polyamide-based sausage casing of a polymer blend comprising a polyamide and a polyolefin modified by carboxyl groups (abstract). The polymer blend comprises nylon 6, nylon 6/12 and a polyolefin. The polyolefin modified by carboxyl groups is a copolymer containing units of ethylene and (meth)acrylic acid (col. 4 lines 22-27). Thus, an ethylene/(meth)acrylic acid ester.

It would be obvious to one of ordinary skill in the art to substitute the casing composition of Delius with the polymeric casing composition of Merritt, because the composition of Delius acts to assist in decreasing the permeability of the casing to

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oxygen and water vapor (col. 4 lines 33-36) and are suitable for not only mechanical but also for manual filling (col. 2 lines 51-55).

The combination of Merritt and Delius is silent with regards to the range of the ratio in which the food casing is compressed.

Ahlgren discloses a polyamide containing casing which are shirred for use as cook-in casings for the packaging of processed meat products, such as ham, turkey, bologna, etc (col. 1 lines 11-18). The film from which the casing is made contains a layer comprising at least two polyamides (col. 2 lines 9-11). The filing of various types of casing with viscous meat emulsion can be carried out by various automatic and semi-automatic processes (col. 14 lines 50-52). Apparatus and processes are well known in the food casing art for producing shirred, tubular casings (col. 14 lines 58-59). Such apparatus may be employed in the preparation of pleated and compressed tubular casing wherein the compression ratios are in the order of at least about 40:1 and up to about 100:1 or even greater (col. 14 lines 60-63). Using suitable food stuffing machinery, casing lengths can be stuffed with particulate or comminuted viscous material such as meat emulsion or the like, and thereafter formed into unit size lengths, using metal clips and/or heat seals (col. 14 lines 63-67). Merritt discloses that the tubular casings are typically gathered into compressed self-sustaining shirred sticks (col. 6 lines 65-67). Thus, it would be obvious to one of ordinary skill at the time of the invention that the compression ratio of Ahlgren would be used to form the shirred sticks of the combination of Merritt and Nobuyuki, because the apparatus and processes that

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use the compression ratios of Ahlgren are well known in the food casing art to form shirred, tubular casings (col. 14 lines 58-59).

The combination of Merritt, Delius and Ahlgren is silent with the water vapor permeability and the bending effects of the shirred food casing.

Stenger discloses a polyamide 6 singly layer sausage casings composed of nylon 6 having a thickness of 39-41 μm and a water vapor permeability of 20 $\text{g/m}^2/\text{day}$ (table 1, comparative example 1). Stenger also recites that sausage casings with too high of a water vapor permeability leads to undesirable weight losses and drying of the sausage (col. 1 lines 60-64).

It would be obvious to one of ordinary skill in the art to combine the stability of the casing of Ahlgren with the water vapor permeability properties of Stenger with the formation of the shirred casings of the combination of Merritt and Delius , because the combination of Stenger and Ahlgren would form a shirred casing that is a polyamide mixture that would improve the strength of the casing during stuffing of the sausage emulsion while maintaining the water vapor permeability properties and can be formed with the proper dimensions as seen in the combination of Merritt and Delius to form a casing that does not need the use of an separate support on an automatic stuffing machine and has smokability properties.

Response to Arguments

11. Applicant's arguments with respect to claims 1, 3-4, 6-10, 12-19 and 21-25 have been considered but are moot in view of the new ground(s) of rejection.

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12. The 35 U.S.C 112, first paragraph, rejection of claim 24 has been withdrawn.

The 35 U.S.C 112, second paragraph, rejection of claim 23 has been withdrawn based on applicant's amendment.

13. The applicant argues that Delius requires nylon 6 polyamide, thus it does not teach or suggest the polymer composition claimed by the applicant. Also, the removal of nylon 6 would destroy the invention of Delius.

In response, the examiner would like to direct the applicant to the MPEP section 2111.03. The claim states "an intrinsically stable shirred tubular single-layer or multilayer food casing **consisting essentially of** synthetic polymers, said polymers **comprising** (i) amide polymer **consisting of** aliphatic copolyamide including nylon 6/66 and/or nylon 6/12, and (ii) at least one further polymer selected from the group **consisting of**, ionomers, ethylene/(meth)acrylic acid esters, polyurethanes, polyether block amides, copolyesters, biodegradable polyesters, and water soluble polymer." The MPEP states that "when the phrase 'consists of' appears in the clause of the body of a claim, rather than immediately following the preamble, it limits only the element set forth in that clause; other elements are not excluded from the claim as a whole." The court held that the transition language "comprising" allowed the claims to cover the entirety of the group as long as the specific element was present. The applicant's claim as written requires that nylon 6/66 or nylon 6/12 be present, but does not exclude additional amide polymers from the tubular casing. Thus, Delius does teach a casing formed from nylon 6/12 and an ethylene/(meth)acrylic acid ester.

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14. The applicant argues that US 635 is generally directed to cellulosic casings containing liquid smoke that provide an enhanced smoky color and flavor to foods via an alkaline treatment.

In response, US 635 discloses a casing that is made from plastics or polyamides (col. 6 lines 55-57). The shirred stick casings are self-sustaining and adapted for stuffing with products, particularly emulsions that form sausages (col. 6 lines 11-13). The casings are made from plastics or polyamides (col. 6 lines 55-57), which are considered soft polymers.

15. The applicant argues that US 750 is directed to multilayer heat shrinkable casings suitable for cook-in use, wherein US 750 merely generically notes various examples wherein the casings were "shirred".

In response, Ahlgren discloses that the filing of various types of casing with viscous meat emulsion can be carried out by various automatic and semi-automatic processes (col. 14 lines 50-52). Apparatus and processes are well known in the food casing art for producing shirred, tubular casings (col. 14 lines 58-59). Such apparatus may be employed in the preparation of pleated and compressed tubular casing wherein the compression ratios are in the order of at least about 40:1 and up to about 100:1 or even greater (col. 14 lines 60-63). Using suitable food stuffing machinery, casing lengths can be stuffed with particulate or comminuted viscous material such as meat emulsion or the like, and thereafter formed into unit size lengths, using metal clips

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and/or heat seals (col. 14 lines 63-67). Ahlgren is providing the generally teaching of shirring tubular casings that can be used in combination with the primary reference.

However, note that while Ahlgren do not disclose all the features of the present claimed invention, Ahlgren is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely, the compression ratios of a shirred casing in order to (motivation) and in combination with the primary reference, discloses the presently claimed invention.

16. The applicant argues that to modify US 635 so as to incorporate such an elevated compression ratio would render US 635 unfit for its intended purpose as a smoke-transport casing.

In response, it noted that “the arguments of counsel cannot take the place of evidence in the record”, *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). It is the examiner’s position that the arguments provided by the applicant regarding the inability of the casings of US 635 to be compressed at a ratio of greater than 100 must be supported by a declaration or affidavit. As set forth in MPEP 716.02(g), “the reason for requiring evidence in a declaration or affidavit form is to obtain the assurances that any statements or representations made are correct, as provided by 35 U.S.C. 24 and 18 U.S.C. 1001”.

17. The applicant argues that the limitations in independent claim 1 and 25 are taught by the secondary references.

In response, the examiner notes that while the secondary references do not disclose all the features of the present claimed invention, the secondary references are used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches certain concepts in combination with the primary reference, discloses the presently claimed invention.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELLEN S. WOOD whose telephone number is (571)270-3450. The examiner can normally be reached on M-F 730-5 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ELLEN S WOOD/
Examiner, Art Unit 1782

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1782